What is claimed is:

1. An organic thin-film transistor comprising a support and provided thereon, a gate electrode, an insulation layer, a source electrode, a drain electrode, and an organic semiconductor layer, the support comprising at least one of resins, and the organic semiconductor layer containing at least one of organic semiconducting materials, wherein a phase transition temperature of one of the organic semiconducting materials is not more than a glass transition point of one of the resins.

2. The organic thin-film transistor of claim 1, wherein the organic thin-film transistor is manufactured by a process comprising the step in which heat treating is carried out at a heating temperature between the phase transition temperature and the glass transition point.

3. The organic thin-film transistor of claim 2, wherein the heating temperature is in the range of from 100 to 250 °C.

4. The organic thin-film transistor of claim 1, further comprising an orientation layer provided in contact with the organic semiconductor layer.

5. The organic thin-film transistor of claim 1, wherein the phase transition temperature is in the range of from 100 to 240 °C.

6. The organic thin-film transistor of claim 1, wherein the glass transition temperature is in the range of from 110 to 250 °C.

7. The organic thin-film transistor of claim 1, wherein the organic thin-film transistor is manufactured by a process comprising the step of coating a solution or dispersion solution of at least one of the organic semiconducting materials on the support to form the organic semiconductor layer.

8. The organic thin-film transistor of claim 1, wherein one of the organic semiconducting materials is a π-conjugated polymer or oligomer.

9. The organic thin-film transistor of claim 8, wherein the π-conjugated polymer is a homopolymer or copolymer of thiophene and the π-conjugated oligomer is a homo-oligomer or co-oligomer of thiophene.

10. The organic thin-film transistor of claim 9, wherein the homopolymer or copolymer of thiophene is a homopolymer or copolymer containing a unit with two or more 3-alkylthiophene rings regioregularly connected in series, and the homo-oligomer or co-oligomer of thiophene is a homo-oligomer or co-oligomer containing a unit with two or more 3-alkylthiophene rings regioregularly connected in series.

11. The organic thin-film transistor of claim 10, wherein the alkyl group of the 3-alkylthiophene rings is an alkyl group having a carbon atom number of from 4 to 15.

12. A manufacturing process of an organic thin-film transistor comprising a support and provided thereon, a gate electrode, an insulation layer, a source electrode, a drain electrode, and an organic semiconductor layer, the support comprising at least one of resins, and the organic

semiconductor layer containing at least one of organic semiconducting materials, wherein a phase transition temperature of one of the organic semiconducting materials is not more than a glass transition point of one of the resins, the process comprising the steps of:

providing a solution or dispersion solution of the organic semiconducting material; and

coating the solution or dispersion solution on the support or on the insulation layer to form the organic semiconductor layer.

13. The manufacturing process of claim 12, comprising the step of heat treating the organic semiconductor layer at a heating temperature between the phase transition temperature and the glass transition point.

14. The manufacturing process of claim 13, wherein the heating temperature is in the range of from 100 to 250 °C.

15. The manufacturing process of claim 13, wherein the phase transition temperature is in the range of from 100 to 240 °C.

16. The manufacturing process of claim 13, wherein the glass transition temperature is in the range of from 110 to 250 °C.

17. The manufacturing process of claim 12, wherein one of the organic semiconducting materials is a π-conjugated polymer or oligomer.

18. The manufacturing process of claim 17, wherein the π-conjugated polymer is a homopolymer or copolymer of thiophene and the π-conjugated oligomer is a homo-oligomer or co-oligomer of thiophene.

19. The manufacturing process of claim 18, wherein the homopolymer or copolymer of thiophene is a homopolymer or copolymer containing a unit with two or more 3-alkylthiophene rings regioregularly connected in series, and the homo-oligomer or co-oligomer of thiophene is a homo-oligomer or co-oligomer containing a unit with two or more 3-alkylthiophene rings regioregularly connected in series.

20. The manufacturing process of claim 19, wherein the alkyl group of the 3-alkylthiophene rings is an alkyl group having a carbon atom number of from 4 to 15.